MANUAL FOR GREEN PRODUCT SCORING SYSTEM

JKR/SIRIM 1: 2017

Enabling Businesses. Enhancing Lives

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JKR/SIRIM 1:2017, Manual for green product scoring system

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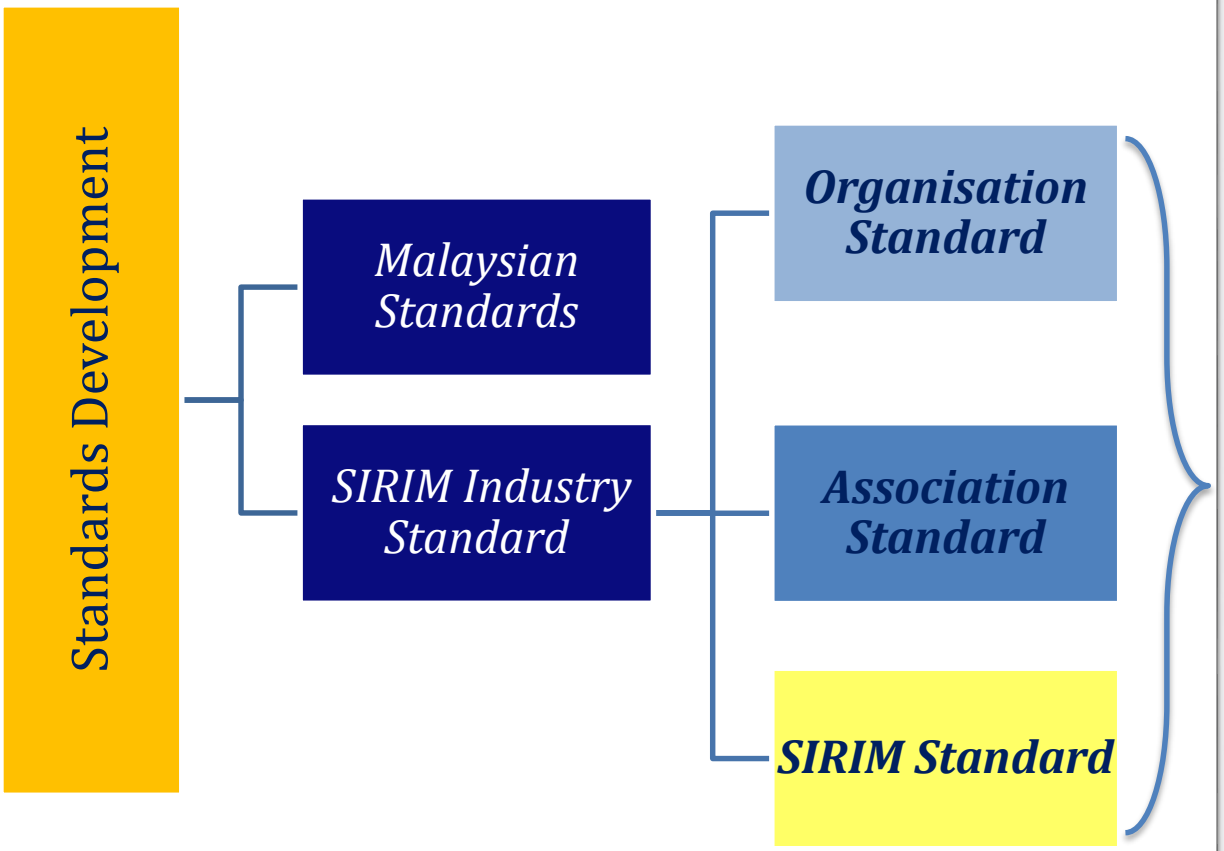
SIRIM INDUSTRY STANDARDS

Standard @ SIRIM

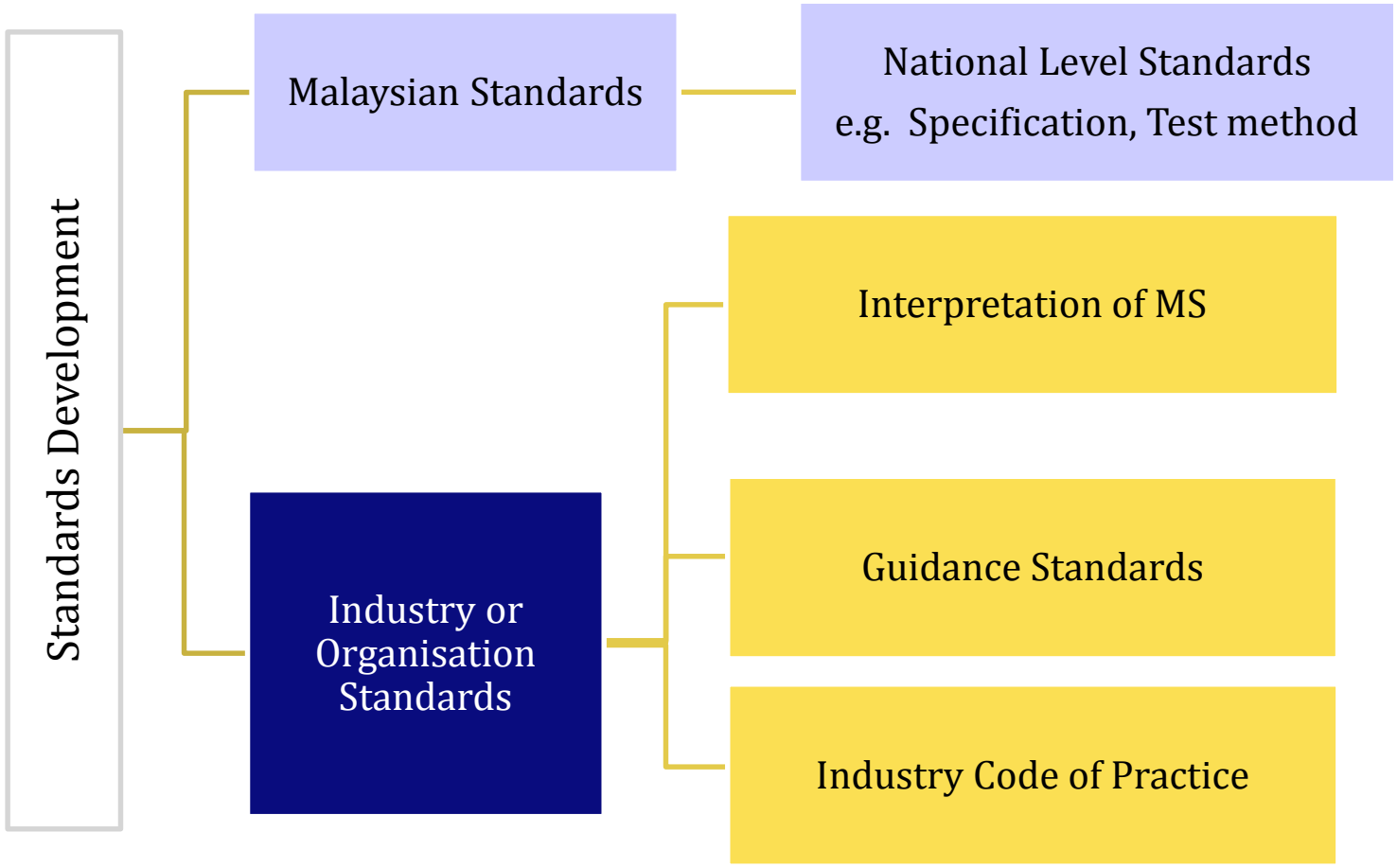


ORGANISATION STANDARD:
A standard developed with consensus from the management of the organisation.

ASSOCIATION STANDARD:
A standard developed with consensus among the many companies within an association or professional society, e.g. trade association that is comprised of many different petroleum companies.

SIRIM STANDARD:
A standard which is developed/funded using SIRIM's fund or external funding. Consensus is developed by representation of all sectors that have an interest in the use of the standard.

Malaysian Standards vs Industry Standards



WHAT ARE SIRIM INDUSTRY STANDARDS?

SIRIM Industry Standards provides an alternative to industries:

When a **national consensus** document is **not required**	The needed standard is intended to cater for **specific requirements of an organisation** or a certain sector of industry.	To **address gaps** that are not covered by Malaysian Standards

SIRIM Industry Standards Development Timeline

1. DRAFTING COMMITTEE (DRAFTING)
   0.5 month
2. PROJECT COMMITTEE (DELIBERATION)
   2 to 3.5 months
3. STAKEHOLDERS CONSULTATION (DRAFT)
   1 month
4. REVIEW COMMENTS AND CONSENSUS
   1 month
5. FINAL DRAFT SIRIM STANDARD
   0.5 month
6. APPROVAL
   0.5 month
7. PUBLICATION
   1 month

TOTAL = 6 to 8 months

JKR/SIRIM STANDARD

JKR/SIRIM 1:2017

ICS: 13.020.50; 91.100

Manual for
Green Product Scoring System

Background on development of JKR/SIRIM 1:2017

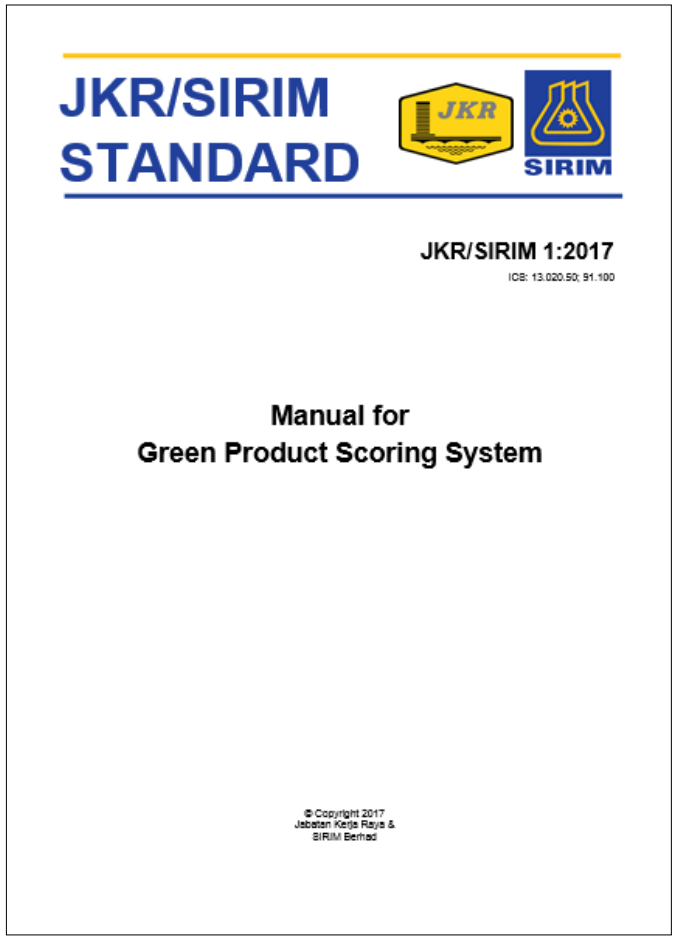
- Standard developed by Project Committee on Green Product Scoring System established by SIRIM Berhad which consists of:
  - Jabatan Kerja Raya
  - Building Materials Distributors Association of Malaysia
  - Malaysian Green Technology Corporation
  - SIRIM STS Sdn Bhd

- Basis document is JKR 20801-0010-14, Green Product Scoring System, published in 2014.

CONTENTS OF STANDARD

- Introduction
- Scope
- Normative references
- Terms and definitions
- Criteria of green or environmentally friendly products
- Green Product Scoring System
- GPSS Rating
- Formula for calculation

Introduction


JKR/SIRIM STANDARD

JKR/SIRIM 1:2017

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Manual for
Green Product Scoring System

Manual for Green Product Scoring System (GPSS) is developed **to calculate the percentage of green product** used for building and road

This standard is developed with the intention **to standardise the method to calculate the score of green product content** in buildings and road projects. JKR has been promoting the use of green products in construction of buildings and roads, in line with the government green policy and initiatives.

Objective

This standard was developed with the following objectives:

a) to provide a systematic and structured assessment system for green products in building and road projects;

b) to measure the number of green products used in building and road works;

c) to educate and create awareness among the stakeholders on green products and services; and

d) to encourage manufacturing industries to apply for green product certification based on the current criteria by independent certification body.

Scope

The scope of this standard:

- Provides the assessment criteria and method to evaluate the content of green products used in super structure of all buildings and roads.

- Applicable for new projects, refurbishment, upgrading or renovation projects. For refurbishment, upgrading or renovation projects, only new components that are specified in the works are evaluated.

- Provides guidance to all public and private organisations regardless of sector, size or type, on green scoring of products used in construction of building and road.

- Not applicable to substructure and temporary works.

Principle of GPSS

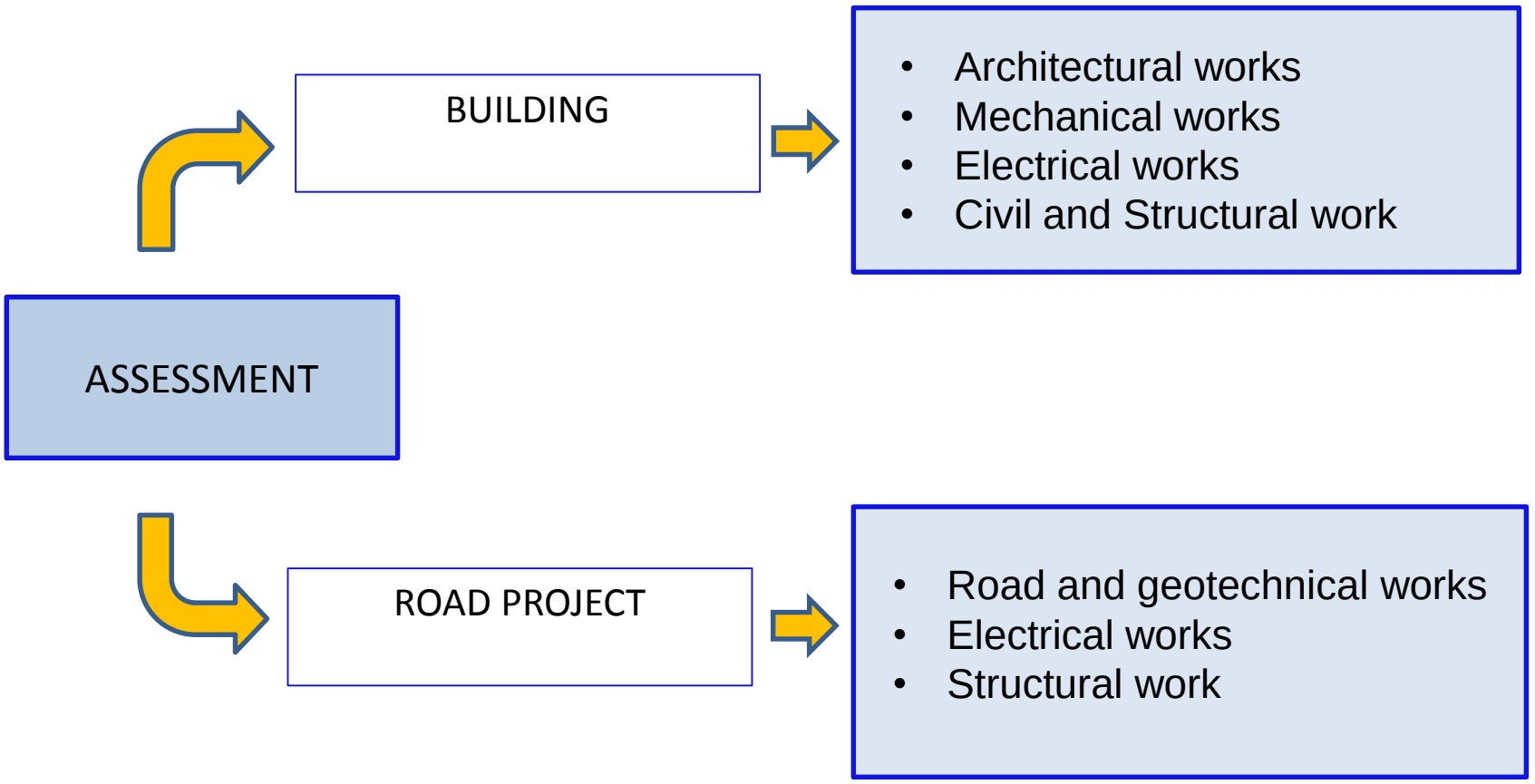
- GPSS is an assessment method to rate the green products used in the construction of buildings or roads. It does not take into account the method of construction of a building or road.

- The assessment is based on a number of criteria used and recognised in the construction industry.

- Quantitative assessment procedure has been adopted to assign score to the product used and ultimately rate the building or road projects being assessed.

- All products used in the project are required to be listed in the green product scoring sheet and taken into consideration for the purpose of score calculation.

Assessment component



Note : Lists of green product reference for building and road projects are shown in B.3 and B.4 of Annex B of this standard

Assessment requirement and criteria

- All products used in the construction of buildings and roads shall comply with the relevant industry, national or international product standards. (i.e ISO 14024, ISO 14021, ISO 14025)

- All products used in the construction of buildings and roads shall be categorised according to the following categories as stated in MyHijau Directory (i.e Product Category 1, 2 ,3, 4)

- The use of local products which can save energy and resources in transportation is highly encouraged

Criteria of green products

In order to determine if a product is green or environmental friendly, consideration on the following **environmental related criteria** during production phase and use phase, are made:

- Environment protection
- Use of renewable energy
- Increased recycled content
- Use of recyclable material
- Use of reusable material
- Improved water efficiency
- Improved energy efficiency
- Improve indoor air quality
- Elimination/reduction of hazardous materials
- Conservation of natural resources

Environmental Labelling

❖ **TYPE I (ISO 14024)**

– Voluntary, multiple-criteria-based third party programme that awards a licence which authorises the use of environmental labels on products indicating overall environmental preferability of a product within a particular product category based on life cycle considerations

❖ **TYPE II (ISO 14021)**

– environmental claim that is made, without independent third-party certification, by manufacturers, importers, distributors, retailers or anyone else likely to benefit from such a claim.

❖ **TYPE III (ISO 14025)**

– environmental declarations present quantified environmental information on the life cycle of a product to enable comparisons between products fulfilling the same function.

Myhijau Mark Category

Category 1

Product that have been certified under a Type I environmental labelling programme based on ISO 14024, including:

- Any other certification schemes registered with Global Ecolabelling Network (GEN).

Category 2

Product that have been certified under a Type III environmental labelling programme based on ISO 14025, including **Carbon Footprint Labelling Scheme**.

Category 3

Product that have been certified under other ISO 14024 Type I-like **Voluntary Sustainable Scheme** (VSS) including:

- Energy efficiency certification schemes e.g. Energy Efficiency Rating & Labelling Scheme by Suruhanjaya Tenaga (ST);
- Water efficiency certification schemes e.g. Water Efficient Products Labelling Scheme by by Suruhanjaya Perkhidmatan Air Negara (SPAN);
- Sustainable timber certification schemes e.g. Malaysian Timber Certification Scheme (MTCS)

Category 4

Products that comply with a performance standard related to the environment consideration such as indoor air quality and environmental protection.

Scoring of product

Scale	Description
0	The product used complies with product specification but does not have any form of green self-declaration or certification.
1	The product used shall comply with the relevant product specification and any one of the following requirements: a) Type II self-declared environmental claim accompanied with verification from third party conformity assessment body; b) Any product registered in MyHijau Directory under **Category 4** (Performance Standard Compliance that relates to the environment consideration such as indoor air quality and environmental protection); c) Any material or product registered in MyHijau Directory under **Category 3** sourced from sustainable and efficiency certification programme managed by recognised bodies such as Malaysian Timber Certification Council and Forest Stewardship Council, Water Efficient Product Labelling Scheme (WEPLS) by SPAN and Energy Efficiency Rating and Labelling Scheme by Energy Commission. d) Any product manufacture by an organization with third party certification of its environmental management system to ISO 14001
2	The product used shall comply with the relevant product specification and any one of the following requirements: **a) Type I** environmental labelling under a third party certification scheme; **b) Type III** environmental declaration under a third party certification scheme; c) Product registered in MyHijau Directory under **Category 1** (Type I environmental labelling) and **Category 2** (Type III environmental labelling).

GPSS Rating

Rating	Scoring (%)
★★★★★	80 - 100
★★★★	70 - 79
★★★	60 - 69
★★	50 - 59
★	40 - 49

RATING FOR BUILDINGS

Rating	Scoring (%)
★★★★★	80 - 100
★★★★	70 - 79
★★★	50 - 69
★★	30 - 49
★	10 - 29

RATING FOR ROADS

GPSS Calculation - Building

DESIGN STAGE

$$\text{Architectural products, } [Aw] = \left\{\frac{\text{Total points requested}}{\text{Total points allocated}}\right\} \times (x \text{ percentage categories of building types})$$

$$[Aw] = \_\_\_\_\_\%$$

$$\text{Mechanical products, } [Mw] = \left\{\frac{\text{Total points requested}}{\text{Total points allocated}}\right\} \times (x \text{ percentage categories of building types})$$

$$[Mw] = \_\_\_\_\_\%$$

$$\text{Electrical products, } [Ew] = \left\{\frac{\text{Total points requested}}{\text{Total points allocated}}\right\} \times (x \text{ percentage categories of building types})$$

$$[Ew] = \_\_\_\_\_\%$$

$$\text{Civil and structural products, } [Cw] = \left\{\frac{\text{Total points requested}}{\text{Total points allocated}}\right\} \times (x \text{ percentage categories of building types})$$

$$[Cw] = \_\_\_\_\_\%$$

$$\text{Total provisional score } (\%) = (Aw + Mw + Ew + Cw)$$

GPSS Calculation - Building

CONSTRUCTION STAGE

$$\text{Architectural products, } [Aw] = \left\{\frac{\text{Total points awarded}}{\text{Total points allocated}}\right\} \times (x \text{ percentage categories of building types})$$

$$[Aw] = \_\_\_\_\_\%$$

$$\text{Mechanical products, } [Mw] = \left\{\frac{\text{Total points awarded}}{\text{Total points allocated}}\right\} \times (x \text{ percentage categories of building types})$$

$$[Mw] = \_\_\_\_\_\%$$

$$\text{Electrical products, } [Ew] = \left\{\frac{\text{Total points awarded}}{\text{Total points allocated}}\right\} \times (x \text{ percentage categories of building types})$$

$$[Ew] = \_\_\_\_\_\%$$

$$\text{Civil and structural products, } [Cw] = \left\{\frac{\text{Total points awarded}}{\text{Total points allocated}}\right\} \times (x \text{ percentage categories of building types})$$

$$[Cw] = \_\_\_\_\_\%$$

$$\text{Total final score}(\%) = (Aw + Mw + Ew + Cw)$$

Example of Calculation for building

Architectural products, $[Aw] = \left\{\frac{62}{94}\right\} \times 60\ \%$

$[Aw] = 39.57\ \%$

Mechanical products, $[Mw] = \left\{\frac{15}{28}\right\} \times 10\ \%$

$[Mw] = 5.36\ \%$

Electrical products, $[Ew] = \left\{\frac{25}{40}\right\} \times 10\ \%$

$[Ew] = 6.25\ \%$

Civil and structural products, $[Cw] = \left\{\frac{15}{68}\right\} \times 20\ \%$

$[Cw] = 4.41\ \%$

Note : Weightage of building works based on classification of building **Category 1** (refer C.1 of Annex C)

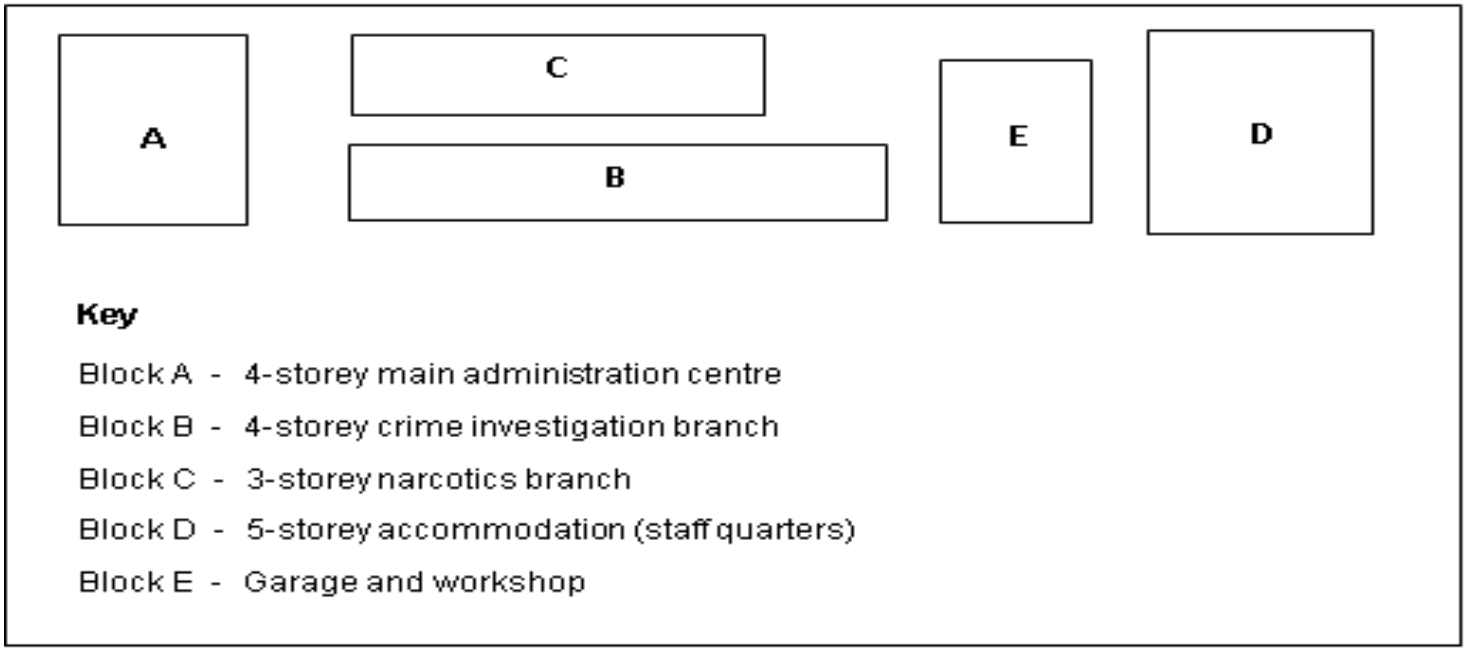
$$\text{Total final score (\%)} = Aw + Mw + Ew + Cw$$

$$= (39.57 + 5.36 + 6.25 + 4.41)$$

$$= 55.59\ \%$$

★★

Example of Calculation for buildings (Group)



Assume the total green product scoring for all buildings (eg. police headquarters development project) for the following works as in Table.

Block	Building category	Score A*w* (%)	Score M*w* (%)	Score E*w* (%)	Score C*w* (%)	Green product score (%)
A	2	25	12	7.5	13	57.5
B	2	23	12.25	8.5	15	58.75
C	2	40	13	8	10.25	71.25
D	2	25.5	11	9	17	62.5
E	3	31	8	9	17	65.0
Total average score						**63.0**

The green product score for the whole development project is **63 %** and the GPSS rating is 3 star

GPSS Calculation - Road

DESIGN STAGE

$$\text{Road and geotechnical products, } [Rw] = \left\{\frac{\text{Total points requested}}{\text{Total points allocated}}\right\} \text{x } 100\ \%$$

$$[Rw] = \_\_\_\_\_\%$$

$$\text{Structural products, } [Sw] = \left\{\frac{\text{Total points requested}}{\text{Total points allocated}}\right\} \text{x } 100\ \%$$

$$[Sw] = \_\_\_\_\_\%$$

$$\text{Electrical products, } [Ew] = \left\{\frac{\text{Total points requested}}{\text{Total points allocated}}\right\} \text{x } 100\ \%$$

$$[Ew] = \_\_\_\_\_\%$$

$$\text{Total provisional score (\%)} = \left\{\frac{Rw + Sw + Ew}{3}\right\}$$

GPSS Calculation - Road

CONSTRUCTION STAGE

$$\text{Road and geotechnical products, } [Rw] = \left\{\frac{\text{Total points awarded}}{\text{Total points allocated}}\right\} \text{x } 100\ \%$$

$$[Rw] = \_\_\_\_\_\%$$

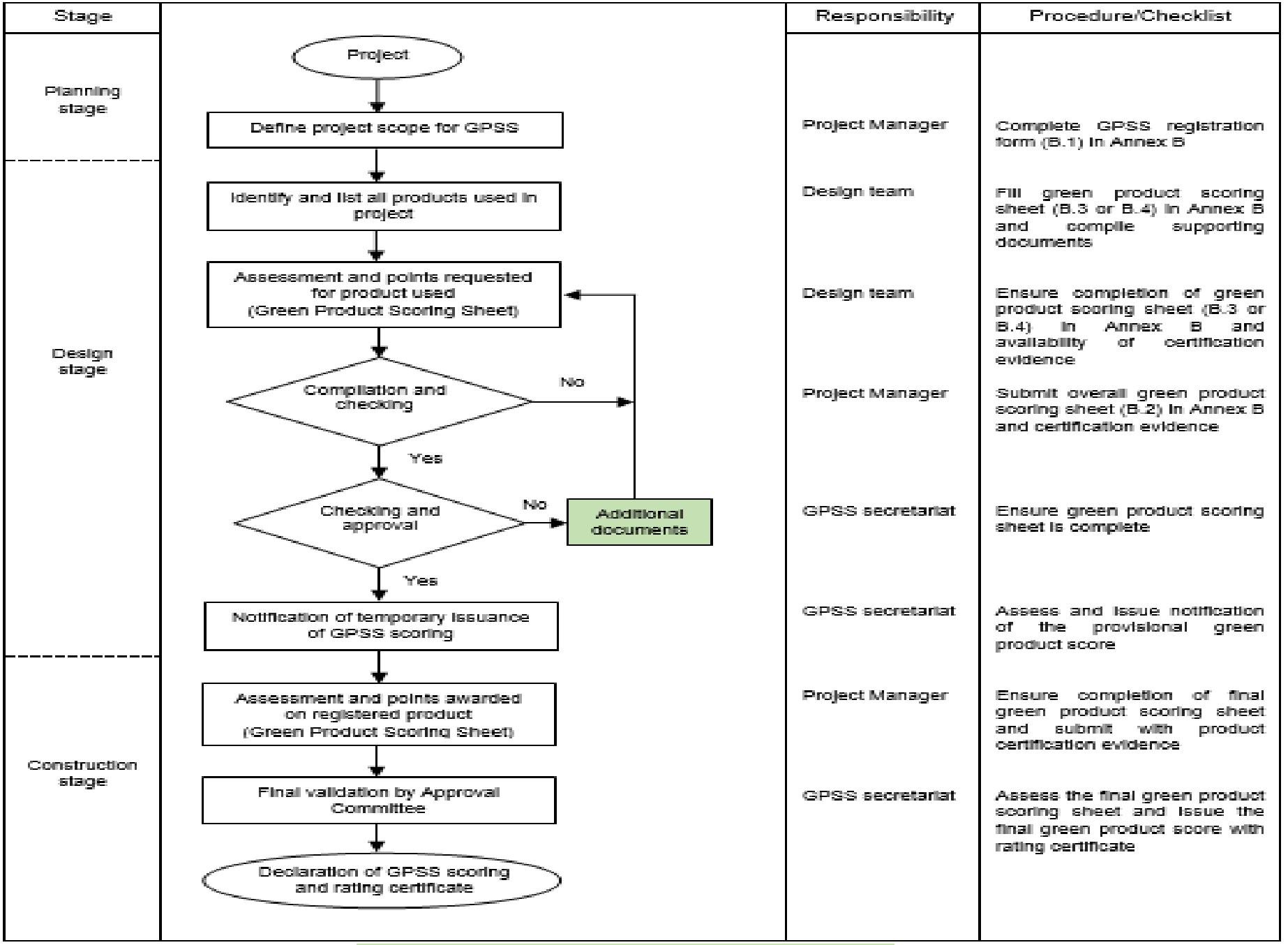
$$\text{Structural products, } [Sw] = \left\{\frac{\text{Total points awarded}}{\text{Total points allocated}}\right\} \text{x } 100\ \%$$

$$[Sw] = \_\_\_\_\_\%$$

$$\text{Electrical products, } [Ew] = \left\{\frac{\text{Total points awarded}}{\text{Total points allocated}}\right\} \text{x } 100\ \%$$

$$[Ew] = \_\_\_\_\_\%$$

$$\text{Total final score (\%)} = \left\{\frac{Rw + Sw + Ew}{3}\right\}$$



GPSS Implementation Flowchart

Responsibilty

DESIGN TEAM shall:

1. prepare a list of all products that will be used for the project;
2. complete the green scoring sheets with the requested points based on the point scale allocation in; and
3. maintain the evidence of product certification and/or declaration to support the scores requested.

PROJECT MANAGER shall:

1. complete and submit the GPSS registration form;
2. verify and consolidate the scores from the individual green products scoring sheets, and submit the completed overall green products scoring sheet;
3. ensure completion of the green scoring sheet with the requested points based on the point scale allocation; and
4. ensure all evidence such as product certification and/or declaration is submitted together with the registration form and scoring sheet (see Annex B). All records shall be maintained.

The **GPSS secretariat** is responsible for awarding the green product scores based on assessment and validation.

ANNEXES

- Annex A (normative): Process flowchart for GPSS.
- Annex B (normative): Registration form and green product scoring sheet (including example of green product reference for construction works).
- Annex C (normative): Weightage of building works and classification of building types.
- Annex D (normative): Example of green product scoring sheet for buildings.
- Annex E (informative): Registered member for Global Ecolabelling Network (GEN).

SIRIM STS
Standard+Training+Consultancy

Thank You

Enabling Businesses. Enhancing Lives